



Forms of Energy

Examples of energy in every day life

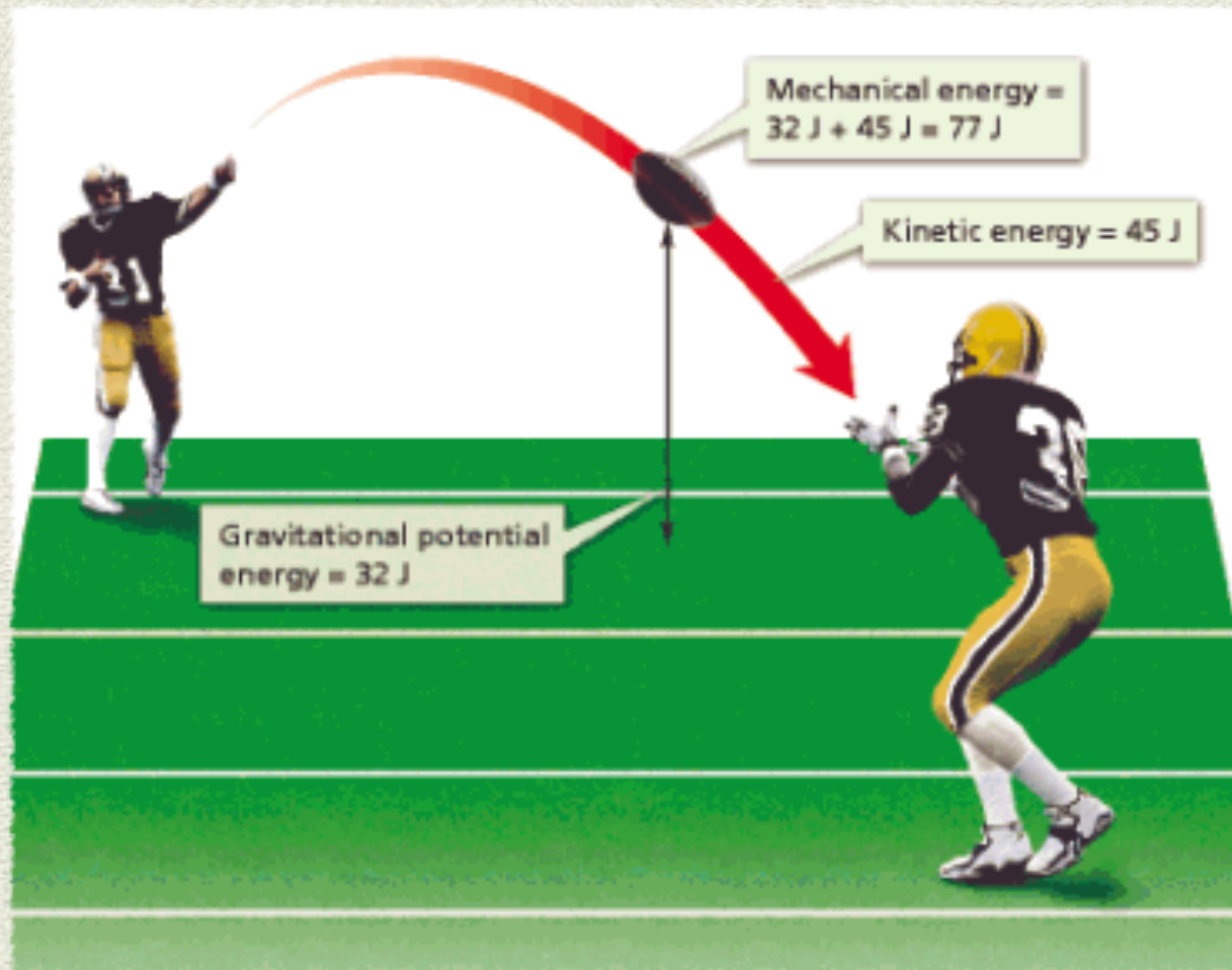
Mechanical Energy

Mechanical energy is the energy associated with the motion or position of an object. Mechanical energy can be kinetic or potential energy.

An object's mechanical energy is a combination of its potential energy and its kinetic energy. You can find an object's mechanical energy by adding the object's kinetic and potential energy.

Mechanical energy =
Potential energy + Kinetic energy





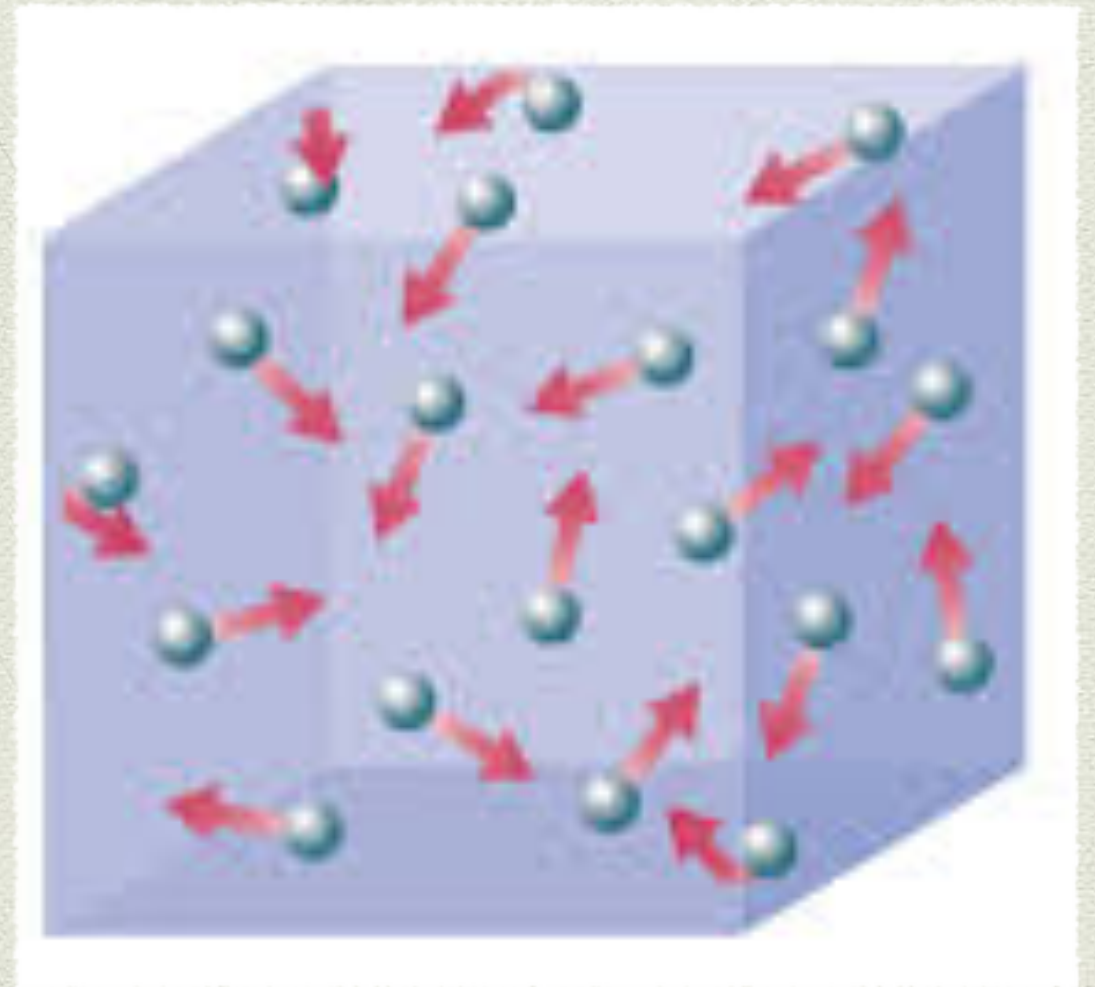
For example, a football thrown by a quarterback has both potential energy and kinetic energy. The higher the football, the greater its potential energy. The faster the football moves, the greater its kinetic energy.

An object with mechanical energy can do work on another object. In fact, you can think of mechanical energy as the ability to do work. The more mechanical energy an object has, the more work it can do.

Thermal Energy

All objects are made of particles called atoms and molecules. Because these particles are constantly in motion, they have kinetic energy. The faster the particles move, the more kinetic energy they have.

These particles are arranged in specific ways in different objects. Therefore, they also have potential energy.





Thermal energy is the total potential and kinetic energy of particles in an object. When the thermal energy of an object increases, the object becomes warmer.

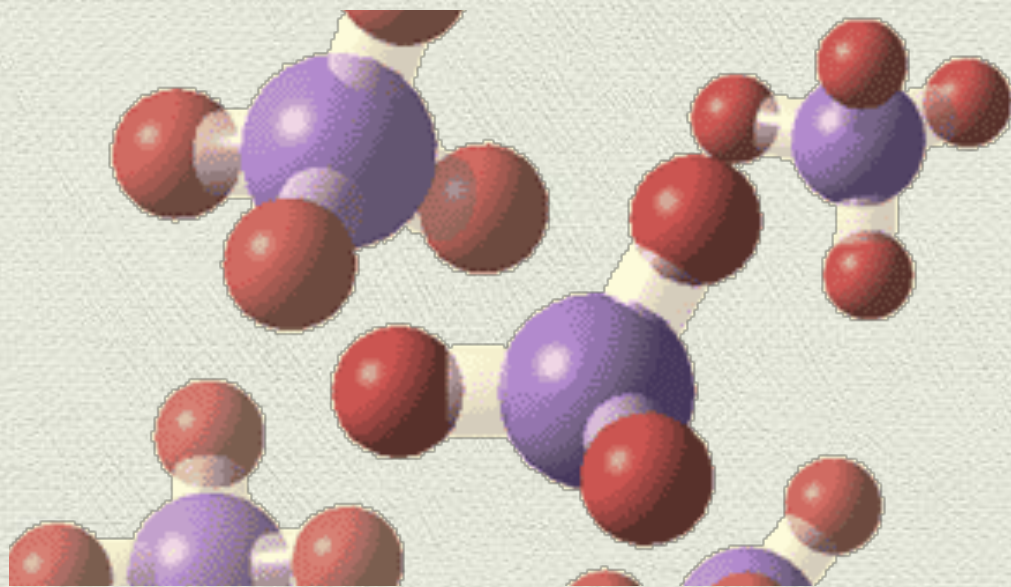
For example, let's look at ice cream on a hot day. Fast – moving particles in the warm air make the particles of ice cream move faster. As the kinetic energy of the particles increases, so does the thermal energy of the ice cream. Eventually, the ice cream melts.

Electrical Energy

When you receive a shock from a metal doorknob, you are experiencing electrical energy. Moving electrical charges produce electricity, and the energy they carry is called **electrical energy**.



Chemical Energy



Almost everything you see, touch, or smell is composed of chemical compounds.

Chemical compounds are made up of atoms and molecules. Bonds between the atoms and molecules hold them together.



Chemical energy is potential energy stored in chemical bonds that hold chemical compounds together.

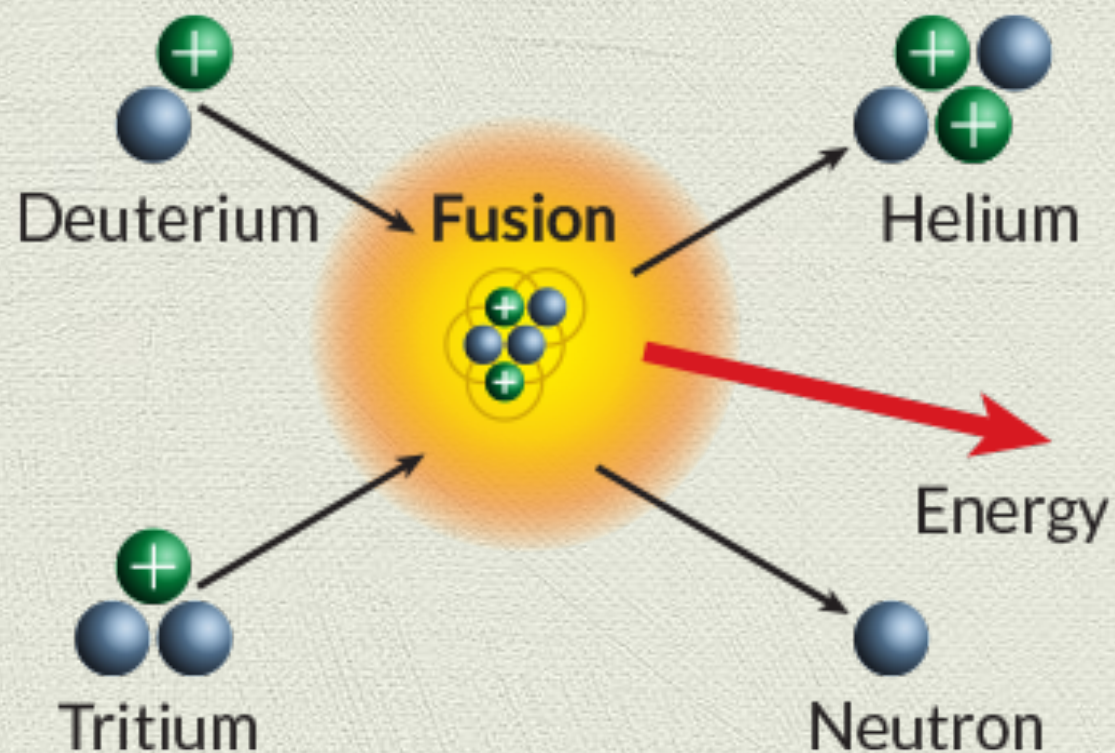
Chemical energy is stored in the foods you eat, in the matches you can use to light a candle, and even in the cells of your body.

When bonds in chemical compounds break, new chemical compounds may form. When this happens, chemical energy may be released.



Nuclear Energy

Nuclear Fusion



Nuclear energy is potential energy stored in the nucleus of an atom. Nuclear energy is released during a nuclear reaction.

One kind of nuclear reaction occurs when a nucleus splits. Nuclear power plants use fission reactions to produce electricity.

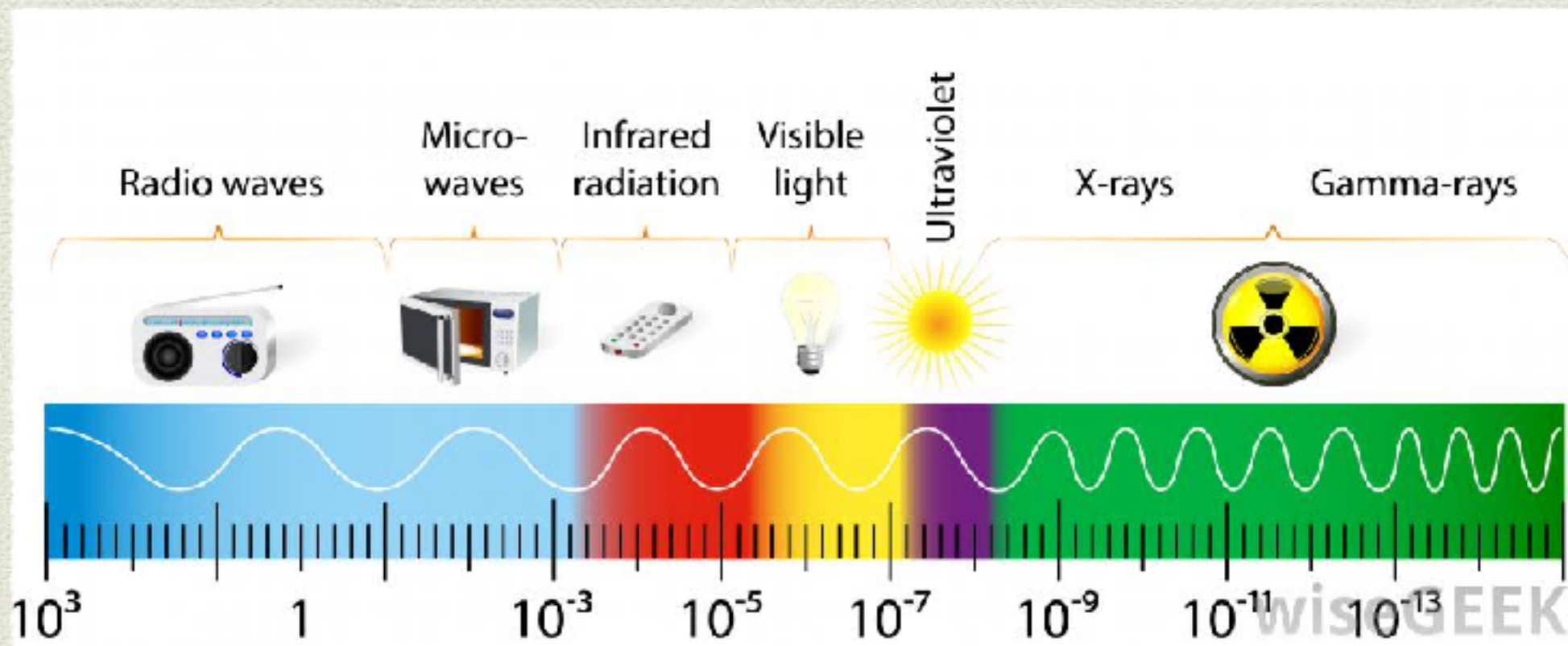
Another kind of reaction, known as nuclear fusion, occurs when the nuclei of atoms fuse, or join together.

Nuclear fusion reactions occur continuously in the sun, releasing tremendous amounts of energy.

Electromagnetic Energy

Electromagnetic energy, such as light, travels in waves that have some electrical properties and some magnetic properties.

Because waves move, they have kinetic energy. Examples of this are microwaves, such as how you cook your food, and X-rays, which a doctor uses to examine patients.



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Mechanical Energy - Energía Mecánica

Thermal Energy - Energía Térmica

Electrical Energy - Energía Eléctrica

Chemical Energy - Energía Química

Nuclear Energy - Energía Nuclear

Electromagnetic Energy - Energía Electromagnética